

REMARKS**Summary of the Office Action**

Claims 1, 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weale (U.S. Patent No. 6,049,470) (hereinafter “Weale”) in view of Ueda (U.S. Patent No. 6,122,009) (hereinafter “Ueda”).

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Weale, Ueda, and in further view of Throngnumchai et al. (U.S. Patent No. 5,705,807) (hereinafter “Throngnumchai”).

Summary of the Response to the Office Action

Applicants have amended claims 1, 2, and 4 to differently describe embodiments of the disclosure of the instant application and/or to improve the form of the claims. Accordingly, claims 1-2 and 4-5 remain currently pending and under consideration.

Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 1, 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weale in view of Ueda. Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Weale, Ueda, and in further view of Throngnumchai. Applicants respectfully traverse these rejections under 35 U.S.C. § 103(a) for at least the following reasons.

Applicants respectfully submit that Ueda fails to disclose or render obvious the features “a load resistor electrically connected to an output terminal of the solid-state imaging element,” as recited by claims 1 and 2, and “wherein the load resistor and the output terminal of the solid-state imaging element are electrically and directly connected via a bonding wire,” as recited by

claims 1 and 2. In Ueda, since a leg portion 11 of a lens portion 10 is arranged between a CCD bare chip 12 and an A/D converter 14, Applicants submit that it is impossible to arrange a bonding wire between the CCD bare chip 12 and the A/D converter 14. In particular, the CCD bare chip 12 and the A/D converter 14 cannot be electrically and directly connected via the bonding wire. Therefore, Applicants respectfully submit that one skilled in the art has no motive to combine the teaching and suggesting of wire-bonding in Weale with Ueda wherein wire-bonding cannot be realized. Thus, the combination of Weale and Ueda fail to render obvious claims 1 and 2.

Furthermore, Applicants respectfully submit that Weale and Ueda do not teach and suggest that heat generation in a load resistor deteriorates characteristics of a solid-state imaging element. Thus, one skilled in the art has no motive to combine Weale and Ueda in order to prevent deterioration of characteristics of a solid-state imaging element due to the heat generation in the load resistor. Weale and Ueda do not have a reasonable prospect for success in preventing deterioration of characteristics of the solid-state imaging element. Therefore, one skilled in the art would not combine Weale and Ueda to address the problems confronting Applicants. Thus, Applicants respectfully submit that one skilled in the art would not derive the claimed invention from Weale and Ueda.

Also, Applicants have amended independent claims 1 and 2 to differently describe embodiments of the disclosure of the instant application. To the extent that these rejections might be deemed to still apply to the claims as newly-amended, the rejections are respectfully traversed for at least the following reasons.

Claim 1 is newly amended to recite a solid-state imaging apparatus that comprises “a package having, a hollow portion that extends in a predetermined direction of the package, and a

mounting portion that protrudes into the hollow portion and includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion; a solid-state imaging element disposed on the first planar portion of the mounting portion and having an energy ray sensitive portion; and a signal processing circuit disposed on the second planar portion and that processes signals output from said solid-state imaging element and including a load resistor electrically connected to an output terminal of the solid-state imaging element;..."

Claim 2 is newly amended to recite a solid-state imaging apparatus that comprises "a package having, a hollow portion that extends in a predetermined direction of the package, and a mounting portion that protrudes into the hollow portion and includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion; a solid-state imaging element disposed on the first planar portion and having an energy ray sensitive portion; and a signal processing circuit disposed on the second planar portion and that processes signals output from the solid-state imaging element and including a load resistor electrically connected to an output terminal of the solid-state imaging element;..." Support for the amendments to claims 1 and 2 is provided at, for example, paragraphs [0027] and [0048] of Applicants' specification.

First, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious a solid-state imaging apparatus that includes a package having a hollow portion that extends in a predetermined direction of the package, as recited by claims 1 and 2. On page 3 of the outstanding Office Action, the Examiner contends that a case C of Weale shown in Fig. 2 of Weale teaches the package of claims 1 and 2. However, case C of Weale is not shown as including a hollow portion that extends in a predetermined direction of case C in Fig. 2 of Weale or any other figure

of Weale. Also, Weale does not describe or render obvious that case C includes a hollow portion that extends in a predetermined direction of case C, as required by claims 1 and 2. Thus, Applicants respectfully submit that Weale fails to disclose or render obvious at least one feature of claims 1 and 2. Also, it is respectfully submitted that Ueda and Throngnumchai fail to overcome the deficiencies of Weale as these references also fail to disclose or render obvious a solid-state imaging apparatus that includes a package having a hollow portion that extends in a predetermined direction of the package, as recited by claims 1 and 2. Therefore, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious at least one feature of claims 1 and 2.

Second, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious a solid-state imaging apparatus that includes a package having a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion, as recited by claims 1 and 2. The Examiner asserts that a case C of Weale teaches the package of claims 1 and 2. However, case C of Weale is not described or shown as including a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion. Thus, Applicants respectfully submit that Weale fails to disclose or render obvious at least another feature of claims 1 and 2. Also, it is respectfully submitted that Ueda and Throngnumchai fail to overcome the deficiencies of Weale as these references also fail to disclose or render obvious a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion, as recited by claims 1 and 2. Therefore, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether

taken alone or in any combination, fail to disclose or render obvious at least another feature of claims 1 and 2.

Third, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious a solid-state imaging apparatus that includes a package having a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion and a solid-state imaging element disposed on the first planar portion, as recited by claims 1 and 2. The Examiner asserts that a case C of Weale teaches the package of claims 1 and 2 and that Weale teaches the solid-state imaging element of claims 1 and 2. As described above, case C of Weale is not described or shown as including a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion. Furthermore, Weale fails to disclose or render obvious a solid-state imaging element disposed on the first planar part of the mounting portion that protrudes into a hollow portion of a package, as recited by claims 1 and 2. Thus, Applicants respectfully submit that Weale fails to disclose or render obvious at least another feature of claims 1 and 2. Also, it is respectfully submitted that Ueda and Throngnumchai fail to overcome the deficiencies of Weale as these references also fail to disclose or render obvious a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion and a solid-state imaging element disposed on the first planar portion, as recited by claims 1 and 2. Therefore, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious at least another feature of claims 1 and 2.

Finally, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious a solid-state imaging

apparatus that includes a package having a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion and a signal processing circuit disposed on the second planar portion, as recited by claims 1 and 2. The Examiner contends that a case C of Weale teaches the package of claims 1 and 2 and that Weale teaches the signal processing circuit of claims 1 and 2. As described above, case C of Weale is not described or shown as including a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion. Furthermore, Weale fails to disclose or render obvious a signal processing circuit disposed on the second planar part of the mounting portion that protrudes into a hollow portion of a package, as recited by claims 1 and 2. Thus, Applicants respectfully submit that Weale fails to disclose or render obvious at least another feature of claims 1 and 2. Also, it is respectfully submitted that Ueda and Throngnumchai fail to overcome the deficiencies of Weale as these references also fail to disclose or render obvious a mounting portion that includes a first planar portion and a second planar portion formed stepped with respect to the first planar portion and a signal processing circuit disposed on the second planar portion, as recited by claims 1 and 2. Therefore, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious at least another feature of claims 1 and 2.

For the reasons above, Applicants respectfully submit that Weale, Ueda, and Throngnumchai, whether taken alone or in any combination, fail to disclose or render obvious at least one feature of claims 1 and 2. Accordingly, because the cited references, either alone or in any combination, fail to disclose or render obvious at least one feature of claims 1 and 2, Applicants respectfully submit that a *prima facie* case of obviousness has not been made against claims 1 and 2.

Furthermore, Applicants respectfully assert that the dependent claims 4-5 are allowable at least because of their dependence from independent claim 1 or 2, and the reasons discussed previously. Also, the additionally-applied reference to Throngnumchai, with regard to dependent claim 4, does not cure the deficiencies discussed previously with regard to Weale and Ueda.

CONCLUSION

In view of the foregoing amendments and remarks, withdrawal of the rejections and allowance of all pending claims are earnestly solicited. Should the Examiner feel that there are any issues outstanding after consideration of this response; the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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